SILT FENCE

Definition

A temporary sediment trap consisting of a filter fabric stretched across, and attached to supporting posts then entrenched. The filter fence is constructed of stakes and synthetic filter fabric with a rigid wire fence backing where necessary for support.

Conditions Where Practice Applies

- ✓ Below disturbed areas where runoff may occur in the form of sheet and rill erosion wherever runoff has the potential to impact downstream resources.
- ✓ Perpendicular to swales or ditches for contributing drainage areas up to one acre in size.

Advantages

- ✓ Downstream riparian and in stream habitat will not be damaged by sediment deposits originating from the development.
- ✓ Able to install at nearly any site where erosion is a problem.

Disadvantages/Problems

- ✓ Problems may arise from incorrect selection of pore size and/or improper installation.
- ✓ Filter fences should not be constructed in streams or used in V-shaped ditches. They are not an adequate method of runoff control for anything deeper than sheet or overland flow.
- ✓ Requires regular maintenance to repair blow down and clean accumulated sediment.

Design Criteria

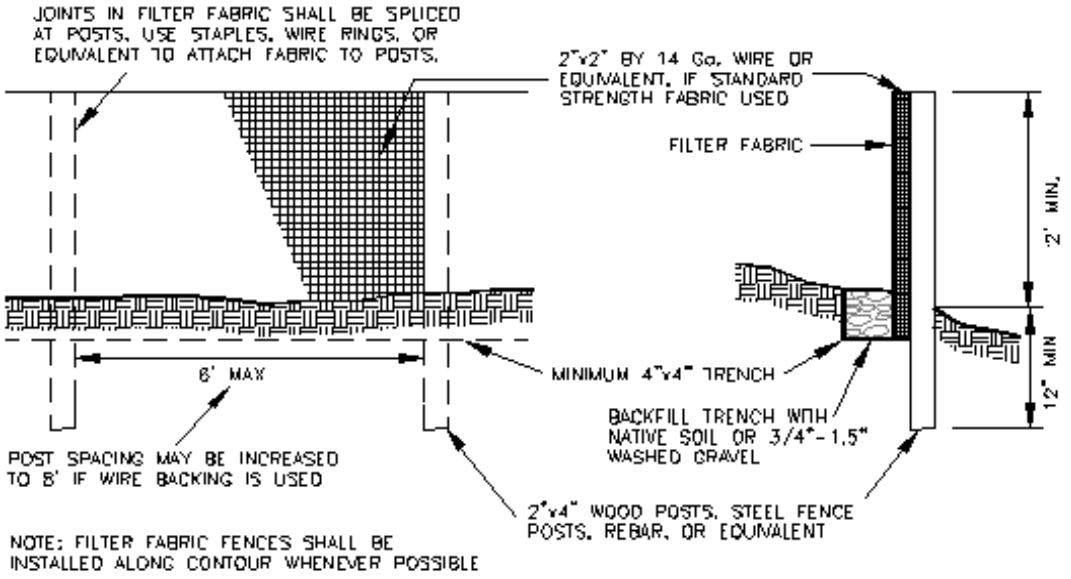
- ✓ Maximum slope steepness (perpendicular to fence) is 1.5:1.
- ✓ Maximum sheet flow path length to the fence is 100 feet (30.5 m) for slopes between 1.5:1 and 3:1, 150 feet (45.7 m) for slopes between 3:1 and 6:1, and 200 feet (61.0 m) for slopes less steep than 6:1.
- ✓ Fence backup support, if used, shall consist of 14 gage steel wire with a mesh spacing of 2 inches (50 mm) or a prefabricated polymeric mesh with support capabilities equivalent to the wire fencing. The polymeric mesh must be as resistant to ultraviolet radiation as the fabric that it supports.
- ✓ The filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid use of joints. When joints are necessary, they can be formed by folding the fabric from each section over on itself several times and firmly attaching the folded seam to the fence post. Any joints must be able to withstand the expected loading on the fabric.
- ✓ Support posts shall be spaced a maximum of 8 feet (2.4 m) apart and driven securely into the ground a minimum of 24 inches (600 mm) where physically possible. Support posts shall be either wood or steel. Wood posts shall have minimum dimensions of 1.5 inches (35 mm) by 1.5 inches (35 mm). Steel posts shall consist of either size No. 6 or larger rebar or ASTM A 120 steel pipe with a minimum diameter of 0.75 inches (20 mm).
- ✓ The minimum height of the filter fabric above the ground line is 30 inches (75 mm).
- ✓ A trench shall be excavated approximately 4 inches (100 mm) wide and 6 inches (150 mm) deep along the line of posts and upslope from the fence line. A minimum of 6 inches (150 mm) of filter fabric must extend into the trench. After placing the fabric, the trench must be backfilled and the soil tamped. When wire or plastic mesh support is used, the mesh shall be buried in the trench a minimum of 3 inches (75 mm).
- ✓ The fabric shall be attached on the upslope side of the posts and support system with staples, wire, or in accordance with the manufacturer's recommendations. Silt fence backup support for the material in the form of a wire or plastic grid is optional, depending

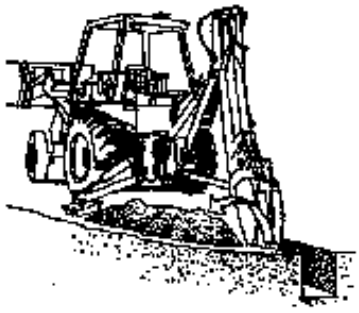
on the properties of the material selected. If wire or plastic backup grid is used, the grid material shall be fastened securely to the upslope of the posts with the fabric being upslope of the grid backup support.

- ✓ Filter fences should only be placed where they will be beneficial, along the downhill end of an exposed slope where erosion is a potential problem. The ends of the fence shall turn upslope (run parallel to the slope) for a distance great enough to allow 30 inches (750 mm) of ponding depth behind the fence line that is perpendicular to the slope. For exposed slopes immediately adjacent to sensitive receiving waters, two rows of filter fence may be required to provide additional protection.
- ✓ Filter fences shall be removed when the upslope area has been permanently stabilized. Retained sediment must be removed and properly disposed of, or mulched and seeded.

Maintenance

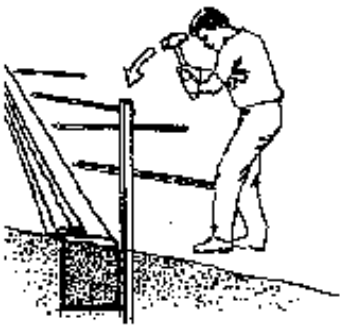
- ✓ Inspect immediately after heavy rainfall, and regularly during prolonged rainfall. Repair as necessary. Sediment must be removed when it reaches approximately one- third (1/3) the height of the fence, especially if heavy rains are expected.
- ✓ Any sediment deposits remaining in place after the filter fence is no longer required shall be dressed to conform with the existing grade, prepared and seeded.
- ✓ All temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment shall be removed or stabilized on-site. Disturbed soil areas resulting from removal shall be permanently stabilized.



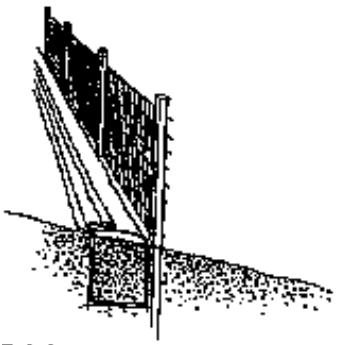


Dig trench

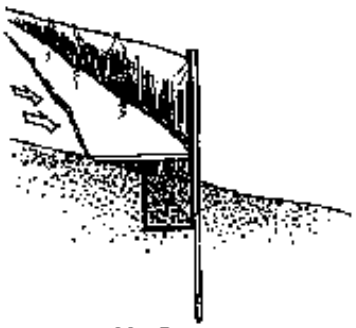
Toe-in-fabric



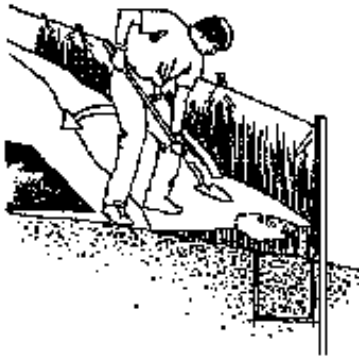
Stake



Reinforce



Monitor



Maintain and clean